

CONTENTS

(Abstracted/Indexed in: *Biol. Abstr.*, *CAB International*, *CABS*, *Chem. Abstr.*, *Curr. Contents AB & ES*, *Environ. Abstr.*, *Environ. Period. Bibliogr.*, *Excerpta Med.*, *Focus On: Global Change*, *Geo. Abstr.*, *Meteorol. & Geostrophys. Abstr.*, *Oceanogr. Lit. Rev.*, *PASCAL/CNRS*, *Selected Water Resour. Abstr.*)

Special Issue: Highway Pollution. A Collection of Papers Presented at the Fourth International Symposium on Highway Pollution, Madrid, Spain, 18–22 May 1992.

Preface	xi
Environmental Policy and Control	
Transport and the environment: challenges and opportunities around the world M.P. Walsh (Arlington, VA)	1
Motor vehicle emissions control: some policy options for developing countries J.C. Carbajo, A. Faiz (Washington, DC)	11
Issues surrounding the use of lead in gasoline — energy, economic and environmental R.J. Larbey (Milton Keynes, UK)	19
Motor vehicle air pollution control in Sweden L. Olsson (Solna, Sweden)	27
Alternative intersection design — a possible way of reducing air pollutant emissions from road and street traffic? P.G. Höglund (Stockholm, Sweden)	35
Traffic control systems to alleviate congestion and air pollution A. Monzón de Cáceres (Madrid, Spain)	45
Roads in urban areas: do they have an environmental role? B. Younes (Abingdon, UK)	51
Integrated freight transportation centers; influence on the decrease in environmental effects in urban areas J.V. Colomer Ferrándiz (Valencia, Spain)	59
Visual principles for the design of noise barriers H. Bendtsen (Copenhagen, Sweden)	67
Prediction of road and railway noise levels E.G. Vadillo, F. Viadero, C. Angulo (Bilbao, Santander, Spain)	73
Environmental Impact	
Road traffic pollution and public nuisance I.S. McCrae, I.D. Williams (Crowthorne, London, UK)	81
Unanticipated benefits of automotive emission control: reduction in fatalities by motor vehicle exhaust gas M. Shelef (Dearborn, MI)	93
Atmospheric exposure to manganese from use of methylcyclopentadienyl manganese tricarbonyl (MMT) performance additive D.R. Lynam, G.D. Pfeifer, B.F. Fort, G.L. Ter Haar, D.P. Hollrah (Baton Rouge, LA; St. Louis, MO)	103
Environmental impact of vehicular traffic in Nigeria: health aspects O.J. Ogunsola, A.F. Oluwole, O.I. Asubiojo, M.A. Durosinmi, A.O. Fatusi, W. Ruck (Ile-Ife, Nigeria; Stuttgart, Germany)	111

Effects of air pollutant emissions from a rural motorway on <i>Petunia</i> and <i>Trifolium</i> H. Pleijel, A. Ahlfors, L. Skärby, G. Pihl, G. Seldén, Å. Sjödin (Göteborg, Sweden)	117
Effect of atmospheric pollution on forested areas of <i>Pinus radiata</i> in the Basque Country (Spain): influence of highways J.M. Mesanza, H. Casado (Vitoria, Spain)	125
Effects of highway pollutants on a small Norwegian lake T. Baekken (Oslo, Norway)	131
Inhibition of bacterial enzyme activity and luminescence by urban river sediments Chen Wei, G.M. Morrison (Göteborg, Sweden)	141
Close range forest defoliation effects of traffic emissions assessed using aerial photography S. Ekstrand (Stockholm, Sweden)	149
Heavy metal contents from road soils in Guipúzcoa (Spain) R. García, E. Millán (San Sebastián, Spain)	157
Lead and cadmium in soils and vegetables from urban gardens of Salamanca (Spain) M. Sánchez-Camazano, M.J. Sánchez-Martin, L.F. Lorenzo (Salamanca, Spain)	163
Platinum in road dusts and urban river sediments C. Wei, G.M. Morrison (Göteborg, Sweden)	169
Traffic pollution: preliminary elemental characterisation of roadside dust in Lagos, Nigeria O.J. Ogunsola, A.F. Oluwole, O.I. Asubiojo, H.B. Olaniyi, F.A. Akeredolu, O.A. Akanle, N.M. Spyrou, N.I. Ward, W. Ruck (Ile-Ife, Nigeria; Guildford, UK; Stuttgart, Germany)	175
Elemental status of grazing animals located adjacent to the London Orbital (M25) motorway N.I. Ward, J.M. Savage (Guildford, UK)	185
Vehicle Emissions	
Actual emissions of vehicles of the N1 category K.N. Pattas, N.A. Kyriakis, Z.C. Samaras (Thessaloniki, Greece)	191
Effects of motorway speed limits on fuel consumption and emissions W.A.M. den Tonkelaar (Delft, Netherlands)	201
On-road vehicle emissions: US studies K.T. Knapp (Research Triangle Park, NC)	209
Vehicle emissions estimations and measurements in Belgium I. De Vlieger, G. Lenaers, R. Craps (Mol, Belgium)	217
Actual car use and operating conditions as emission parameters: derived urban driving cycles M. André, R. Joumard, A.J. Hickman, D. Hassel (Bron, France; Crowthorne, UK; Cologne, Germany)	225
Vehicle maintenance and exhaust emissions A.J. Hickman (Crowthorne, UK)	235
Emission results from a 48-car test evaluation of MMT performance additive D.L. Lenane, B.F. Fort, G.L. Ter Haar, D.R. Lynam, G.D. Pfeifer (St. Louis, Baton Rouge, MO)	245
Evolution of road traffic emissions in urban areas of the European Community Z. Samaras, K.-H. Zierock (Thessaloniki, Greece; Berlin, Germany)	253
Atmospheric Pollutants	
Ambient air concentrations of pollutants at traffic-related sites in urban areas of North Rhine- Westphalia, Germany H.-U. Pfeffer (Essen, Germany)	263

Vehicle emissions as the major source of gaseous aromatic hydrocarbons at different locations in Germany	
B. Schröder, W. Dannecker (Hamburg, Germany)	275
The composition and concentration of hydrocarbons in the range of C ₂ to C ₁₈ emitted from motor vehicles	
B. Zielinska, K.K. Fung (Reno, NV; Chatsworth, CA)	281
Size fractionated determination of black carbon particles in airborne dust originating from highway traffic	
E. Schultz (Freiburg, Germany)	289
Emissions from 200 000 vehicles: a remote sensing study	
P.L. Guenther, G.A. Bishop, J.E. Peterson, D.H. Stedman (Denver, CO)	297
Detection of airborne carbonaceous particulate matter by scanning electron microscopy	
R.S. Hamilton, P.R. Kershaw, F. Segarra, C.J. Spears, J.M. Watt (London, UK)	303
Metal dispersion and transportational activities using food crops as biomonitors	
N.I. Ward, J.M. Savage (Guildford, UK)	309
The origin of lead in urban aerosols — a lead isotopic ratio study	
M. Hamester, H. Stechmann, M. Steiger, W. Dannecker (Hamburg, Germany)	321
Sensitivity analysis of evaporative emission estimates from gasoline passenger cars	
D. Gaudioso, C. Trozzi, R. Vaccaro, M.C. Cirillo (Rome, Italy)	325
Air Quality Modelling	
Motor vehicle emission modelling issues	
A.W. Gertler, W.R. Pierson (Reno, NV)	333
Comparative assessment of two forecasting models for road traffic emissions: a German case study	
N. Metz, Z. Samaras (München, Germany; Thessaloniki, Greece)	339
Comparative assessment of two forecasting models for road traffic emissions: a French case study	
R. Joumard, D. Zafiris, Z. Samaras (Bron, France; Thessaloniki, Greece)	351
Methodology for predicting vehicle emissions on motorways and their impact on air quality in the Netherlands	
A.H. Versluis (Delft, Netherlands)	359
Long-term continuous measurements of air pollutant concentrations, meteorology and traffic on a rural motorway and a model validation	
Å. Sjödin, G. Loman, G. Omstedt (Göteborg, Malmö, Norrköping, Sweden)	365
Diffusion problems near tunnel portals in built-up areas	
W. Bächlin, P. Klein (Karlsruhe, Germany)	377
Comparison between measured and calculated concentrations of nitrogen oxides and ozone in the vicinity of a motorway	
M. Kuhler, J. Kraft, H. Bess, U. Heeren, D. Schürmann (Wolfsburg, Hannover, Reinfeld, Germany)	387
Observed characteristics of the dry deposition velocity of O ₃ and SO ₂ above a wet deciduous forest	
J. Padro (Downsview, Canada)	395
A microscale dispersion model for carbon monoxide emitted from motor vehicles	
N.M. Zoumakis, A.G. Kelessis, M. Petrakakis, K. Nikolaou, T.I. Kozyraki (Thessaloniki, Greece)	401
Numerical calculations and image processing applied to the study of pollutant dispersion	
J. Massons, J. Escoda, J. Camps, J. Ollé, F. Díaz (Tarragona, Spain)	409
Air pollutant modelling at highway sites of restricted topography	
R.S. Hamilton, I.S. McCrae, D.M. Revitt (London, UK)	417

A fluid modeling study of concentration distributions at urban intersections W.G. Hoydysh, W.F. Dabberdt (Boulder, CO; Long Island City, NY)	425
Concentration of air pollutants inside cars driving on highways and in downtown areas W. Rudolf (Offenbach, Germany)	433
Computation of ambient concentration distributions due to vehicle emissions M. Schorling (Munich, Germany)	445
Water Quality	
Sediment accumulation in detention or retention ponds Y.A. Yousef, T. Hvitved-Jacobsen, J. Sloat, W. Lindeman (Orlando, Tallahassee, FL; Aalborg, Denmark)	451
Street wash-off behaviour of heavy metals, polyaromatic hydrocarbons and nitrophenols W. Wüst, U. Kern, R. Herrmann (Bayreuth, Germany)	457
The pollution of effluents from pervious pavements of an experimental highway section: first results G. Stotz, K. Krauth (Stuttgart, Germany)	465
Highway storm drainage with kerb-opening inlets A. Uyumaz (Istanbul, Turkey)	471
Mobilisation of heavy metals during tunnel maintenance S. Andersen, Ø. Vethe (Ås, Norway)	479
Transport of heavy metals through accumulated sediments in wet ponds Y.A. Yousef, L'Yu Lin, W. Lindeman, T. Hvitved-Jacobsen (Orlando, Tallahassee, FL; Aalborg, Denmark)	485
Combined sewer overflow from the city area of Munich W. Schulz, M. Brechenmacher, H. Wirth (Munich, Germany)	493
Treatment systems for urban and highway run-off in Denmark T. Hvitved-Jacobsen, N.B. Johansen, Y.A. Yousef (Aalborg, Lyngby, Denmark; Orlando, FL)	499
The contribution of highway run-off to river sediments and implications for the impounding of urban estuaries: a case study of Belfast S.E.J. Watts, B.J. Smith (Belfast, UK)	507
A sampling device for measuring physical and chemical characteristics of urban street runoff T. Striebel, J. Daub, R. Herrmann (Bayreuth, Germany)	515
The contribution of parked vehicle emissions to the pollution of urban run-off H.H. Hahn, R. Pfeifer (Karkruhe, Germany)	525
Urban stormwater quality from a residential catchment G.A. Fulcher (Shrewsbury, UK)	535
The performance of vegetated biofilters for highway runoff control J.B. Ellis, D.M. Revitt, R.B.E. Shutes, J.M. Langley (London, UK)	543
Author index	551
Subject index	553
Announcement	562

